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The History of the Concepts of Fear and Anxiety

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DEFINITION

Morals and manners change, the historical mystery story writer John Dickson Carr once wrote, but fear is always the same over the ages. The definition of fear and its close relative, anxiety, have varied over time, however, along several dimensions that we will discuss in this chapter. To allow us a starting point in attempting a preliminary definition of these constructs, we shall restrict ourselves to the relatively modern era.

The distinction between the two constructs provides a base for defining them. Freud (1923) was probably the first popular theorist to make the distinction. *Reality anxiety* had an actual, physical basis in the environment that was sensed by the organism—thus, fear. *Neurotic* and *moral* anxiety covered the ground that is usually accorded to anxiety as a modern construct, including such modifiers as "basic" and "free-floating," as well as shame and guilt. Freud was incomplete and somewhat vague about fear and anxiety, and it remained for his more socially aware followers to offer meaningful clarification.

The most articulate of the neo-Freudians was Karen Horney. Fear, she wrote (Horney, 1937), is a proportionate reaction to an obviously dangerous situation. A reaction out of proportion is phobia. The attempt to combat the phobia by "marching over" it is counterphobia. The danger that gives rise to anxiety is "hidden and subjective" and thus apparently irrational, although it may, in fact, be proportionate to the unconscious threat that underlies it.

Another of the neo-Freudians, Harry Stack Sullivan (1948), pointed to a further distinction between anxiety and fear. Fear creates a tension that motivates the sufferer to take remedial action, to remove the physical threat, to escape from it or otherwise to neutralize it. Anxiety, on the other hand, fails to evoke "energy transformations" directed at its relief even when situational stimuli are involved, though, for the most part, the true source of the anxiety is unknown to its victim.

Murray's (1938) concepts of *harmavoidance* and *infavoidance* span the anxiety–fear distinction. The former is concern about physical harm to the self, ordinarily a fear or phobia with a physical instigator. Infavoidance is the fear of failure—a common experience in a competitive society—one that may be clearly reality based or totally irrational.

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We note in passing that key terms in defining anxiety and fear, such as *proportionate, disproportionate, free-floating*, and *phobia*, turn out to be fairly slippery when attempts are made to employ them as definienda (Levitt, 1980). But such is ever the case when hypothetical constructs are used in defining other hypothetical constructs.

MAJOR PERSPECTIVES

Having sketched some definitions, let us examine some of the major forces that have shaped current thinking about fear and anxiety by examining the major theorists and the movements that they spawned. We shall examine these theorists in their historical context, proceeding chronologically from earliest to latest. Historically, references to anxiety states and phobias are present almost from the beginning of recorded Western history. Accounts of anxiety are present in the ancient Greek literature several hundred years B.C. Rosen (1968) cites the example of Hippocrates telling of a young man who was terrified of flute music. There is another account of fear of heights, and Aretaeus describes a carpenter who could not leave the jobsite to go to the marketplace, the bath, or any other social place without experiencing acute anxiety, i.e., going "completely mad." Mention is also made of Celsus, a wealthy man who lived in constant fear of being poverty stricken. His family and friends would invent stories of imaginary legacies in order to alleviate Celsus's anxiety (Rosen, 1968).

In reviewing the literature over the centuries, with a particular focus on the last two centuries, we delineated five major perspectives or schools of thought regarding the constructs of fear and anxiety: (1) the physiological–neuropsychological perspective, (2) functionalism, (3) the learning theory perspective, (4) the existentialistic approach, and (5) the psychodynamic perspective. A brief definition of each perspective is offered below.

The *physiological–neuropsychological* perspective is characterized by attention to the function of physiological systems or brain structures in relation to anxiety or fear. *Functionalism* is marked by its focus on the possible adaptive purpose of fear or anxiety, or by an emphasis on the process or activity of fearful or anxious behavior, rather than on structural components of such behavior. The *learning theory* perspective is distinguished by its emphasis on anxiety and fear being learned or acquired, with such mechanisms of learning consisting mostly of observable stimulus–response or classical conditioning experiences, rather than conflict between intrapsychic, nonobservable structures. The *existentialistic* approach is defined by its emphasis on the personal experiencing of fear or anxiety, which is regarded as an aspect of the "human condition." This is usually due to some fear of the unknown or to the realization that life is finite and death inevitable. Finally, the *psychodynamic perspective* is characterized by its positing of intrapsychic elements or conflicts as causal elements in fearful or anxious behavior. These conflicts are usually a consequence of some experiences during early development.

The development of the contructs of fear and anxiety, as expressed through the above-mentioned five perspectives, will be traced through four major time periods: (1) antiquity, (2) the Middle Ages, (3) the pre-Modern era, and (4) the Modern era.

ANTIQUITY

For purposes of discussion, we will define antiquity as spanning the beginning of recorded history to approximately A.D. 500. During this period there were no major

developments in the physiological–neuropsychological perspective or the learning perspective, as we have defined them. The first historical developments of the constructs of fear and anxiety fit roughly into our category of functionalism.

Functionalism

Fear is mentioned in biblical writings and in ancient Greek writings. Petronius said "fear first make the gods" (quoted in Brinton, 1897). Fear was the functional basis of many primitive religions. That is, the existence of fear made the creation of religions necessary to deal with fearfulness. In the Garden of Eden, when Adam is confronted by God after he and Eve have eaten the forbidden fruit, we see the first expression of fear in human life in the Bible: "I heard thy voice in the garden, and I was afraid. . ." (Gen. 3:10).

The Old Testament is riddled with examples of humankind fearing God because of disobedience and subsequent fear of punishment. Pfieffer (1955) finds "fear of God" references throughout the Old Testament. He notes that there are two words for fear in the Hebrew language—*yirah*, or reverence, and *pachad*, or dread. "Fear of Yahweh" was the Hebrew definition of religion up to New Testament times (Smith, 1914).

The functional aspect of fear is seen more clearly in Toy's (1902) tracing of this fear to Jewish fear of tribal leaders or kings who punished their subjects for disobedience. *Pachad* or divine anger gradually refines itself into *yirah* for divine law, as one moves through the New Testament period. Toy traces the original concept, however, to the "moral strenuousness" of the Jewish people and to their "oriental governmental scheme of life," which encouraged such moral stricture. Fear served the function of ensuring adherence to a cultural style, maintaining social order, and instilling awareness of responsibility to someone other than oneself. This was undoubtedly an adaptive mechanism that enhanced survival of a primitive society.

The creation of ancient dieties to control primitive societies anticipated the formal recognition of fear as an important shaper of behavior. This phenomenon is reflected in functionalism throughout the ages and, of course, is a fundament of learning theory of the Modern era.

Existentialism

Although we found no specific application of existential philosophy to fear and anxiety per se in ancient times, Kierkegaard (1844/1980) has conducted a thought-provoking examination of biblical writings related to anxiety or fear from an existential standpoint. His analysis led him to believe that the prohibition in the Garden of Eden *caused* anxiety because it made humankind aware of having a choice, or of having freedom. Freedom causes anxiety: "Anxiety is freedom's actuality as the possibility of possibility" (1844/1980, p. 42). With the prohibition in the garden also came judgment: "You shall surely die"—a penalty that is certain to evoke anxiety (see Genesis 2:17 and 3:5).

Kierkegaard further states, however, that the prior innocence before the fall may have also caused anxiety because "innocence, paradoxically, causes anxiety as innocence is nothingness, and nothingness makes us anxious." Apparently you are damned if you do and damned if you don't under Kierkegaard's system.

Other signs of an existential approach are seen among the ancient Greeks. Plato (c. 427–347 B.C.) addressed the concepts of fear and anxiety, representing in his approach a step backward from Hippocrates in terms of scientific psychology. Plato combined the keen empiricism of Hippocrates with a mysticism reminiscent of oriental philosophies.

He saw fear as one of the by-products of the irrational soul severing its ties with the rational soul (Zilboorg, 1967), and in his dialogues he talked of two types of fear: (1) fear of expected evil and (2) fear of an evil reputation, in which a man fears he will be impugned socially.

Zeno the Stoic (c. 350–c. 258 B.C.) said we refuse to do ill acts by nature. If done according to reason this declining is called caution; if unreasonable, it is called fear. Wise men are not capable of fear. Fear is an expectation of imminent ill, or a "contraction of the soul disobedient to reason, caused by expectation of ill" (quoted in Diamond, 1974). Passion is irrational and, presumably, harmful. In fact, Cicero (106–43 B.C.) said anger, fear, and pain might even produce a mental disorder. We see here the beginnings of a rational-existential perspective: One creates one's own cognitive-emotional experience through the way one perceives events and situations.

Later, Plutarch (A.D. 46–120) noted "when a man is depressed, every little evil is magnified by the scaring spectres of his anxiety," and "nowhere can he find an escape from his imaginary terrors," a fair description of an agitated depression or, in DSM-III-R terms, a generalized anxiety disorder with an associated depressive disorder. Plutarch saw this connection between depression and fear as the depressed man "looks on himself as a man whom the gods hate and pursue with their anger" (quotes are from Zilboorg, 1967).

Continuing with this somewhat rational-existential approach, Aretaeus of Cappadocia (c. A.D. 98–138) wrote of his predecessor, Soranus, that he thought "disputations of philosophers" could dispel sadness, fear, and rage (Zilboorg, 1967). Epictetus's writings are also consistent with this rational-existential view, as he noted that we become anxious over things that are evil and are beyond our power to prevent. Nothing beyond our will's control is either good or evil, however, and we control our will, so there is no reasonable cause to be anxious (Oates, 1940). Thus, we find an early ancestor of modern rational-emotive therapy (Ellis & Harper, 1975).

The Psychodynamic Perspective

Although very little history pertaining to psychodynamic views of fear and anxiety occurred in antiquity, we do note that over 2,000 years before Freud, Aristotle (384–322 B.C.) identified purging or *katharsis* as something that resulted from the playing of melodies that excite the soul and left individuals enlightened and delighted instead of feeling fearful (Sahakian, 1975). Aristotle's idea anticipates the Modern era's esoteric practice of *music therapy* (Gaston, 1968).

THE MIDDLE AGES

The Middle Ages (c. A.D. 500–c. 1500) were not a prime time for education, philosophy, and science. Europe was too busy experiencing anxiety and fear to theorize about them. No major contributions to the physiological–neuropsychological, learning, existentialistic, or psychodynamic perspective are found. Mention is made here only of some brief contributions to functionalism.

Functionalism

Vives (1492–1540; see Diamond, 1974) described fear as an adaptive physiological process, perhaps anticipating the physiological–neuropsychological perspective of the

pre-Modern era. A brave man is one whose fear response consists of facial pallor, indicating blood has been drawn away from the extremities and is sending its heat to the heart, thus strengthening it. A man with an ignoble soul will lose heat from the heart as the blood descends into his bowels and causes them to loosen.

As noted above, the Middle Ages were an "age of anxiety" (Tillich, 1952). There was a "morbid psyche" and a sense of "impending doom," as the Christian Church, centered in Rome, was engaged in much infighting and the feudal order was crumbling as nation-states were beginning to form (Rosen, 1968). Given the upheavals and real danger of the times, emotional arousal consistent with symptoms of fear and anxiety was largely reality based and probably served a protective function.

THE PRE-MODERN ERA

The pre-Modern era (C. A.D. 1500 to 1900) produced voluminous writings that bear directly on current thinking in the area of fear and anxiety. This was a particularly rich period for psychological thought. Much is found relevant to the physiological–neuropsychological and functional perspectives, less to the learning perspective and existentialism.

The Physiological–Neuropsychological Perspective

Descartes (see Descartes, 1649/1955), in espousing mind–body dualism, saw the human mechanical body being set in motion by external stimuli, but he also thought there was a role for internal factors that determined the kind and intensity of the body's responses.

Responsiveness was determined by the nerves and "animal spirits" that flowed through the body. The physiological component of emotion was due to variations in animal spirits. When necessary to avoid harm through patience, such as when in a fearful state, the spirits must be less abundant, and the heart will constrict and save blood in preparation for anticipated need (see Hilgard's summary, 1987).

According to Descartes, emotional preparedness, even though it occurs within the body, was still, as with sensory function, mechanistically determined because the condition of the spirits was determined by the mechanism of the heart circulating the blood. Emotions were no more voluntary than cardiac function (Fancher, 1979).

Nearly 200 years later, James Mill (1829/1967), deviating somewhat from this thinking, saw a two-way association between certain states of the internal organs and ideas or feelings. Sensations (such as indigestion) in the stomach can serve as antecedents to the consequence of an emotion, such as anxiety. Similarly, an emotion-like anxiety can cause indigestion. Fear acts similarly by accelerating the vermicular motion of the intestines (Madden, Herrnstein, & Boring, 1965). This early psychosomatic theorizing fit well with the evolution of elementarism in experimental psychology in the late nineteenth century. Hilgard (1987) believes this paradigm encouraged psychologists to look for elements of mental life with corresponding physiological representations.

Developing this connection further, and operating from an originally structuralist position, an argument was begun between those who saw feelings as attributes of sensation (Stumpf, 1907; Ziehen, 1891/1909) and those who saw feelings as separate elements (Titchener, 1899; Wundt, 1896/1907). This sort of structuralist debate was a natural concomitant of the theorizing of William James and Carl Lange, described below.

The separately published theories of James and Lange both suggested that bodily changes follow the perception of some arousing stimulus, and the conscious awareness of the bodily changes as they occur is actually the emotion. James proposed his theory in 1884 and expanded it in 1890, emphasizing striate muscles and visceral changes. In Denmark, Lange (1885/1887) published independently of James, emphasizing heart rate and blood pressure. For both theorists, autonomic reactivity was the cause of emotional experience. In a later era this was to be proven false.

Functionalism

From the functionalist perspective, Hobbes (1651), borrowing from Aristotle's *Rhetoric*, saw fear as the foremost element in motivation, a view that persisted for centuries. Fear developed from a perception of pain inherent in an object, which caused withdrawal from that object. Fear depends on the "calculation" of evil results. Hobbes thought the most important determiner of human conduct was self-interest, and fear was the most important element influencing self-interest.

As in ancient Jewish times, fear was still seen as a particularly important element in social conduct. Hobbes felt that humans needed a strong monarchy with a powerful leader to help provide security beyond their own strength or else they would live in "continual fear, and danger of violent death; and the life of man, solitary, nasty, brutish, and short" (quoted in R. I. Watson, 1979).

Hobbes saw human passions (emotion and motivation) as motions of some internal substance of the head that travels to the heart. When the substance helps with vital function, such as cardiac function, it is experienced as delight. Such pleasant feeling causes us to draw near the object that caused it. When the substance does not help vital functions, it is experienced as unpleasant, and we draw away from the object that provoked it. When displeasure is present it is called aversion, when it is anticipated it is called fear.

Also during this pre-Modern era, Erasmus Darwin (1794) noted that the animal's first important sensations upon birth are pressure on the precordium signalling lack of respiration and the physical discomfort of moving from 98 degrees to a colder environment. From these first disagreeable sensations fear is developed, an anticipation of Rank's (1929) birth trauma hypothesis. Fear is the expectation of disagreeable sensations, and the early association between emotions and sensations persists throughout life. Fear has a universal language that consists of a cold, pale skin, trembling, quick respiration, and evacuation of the bladder and bowels (cf. Diamond, 1794–1796/1974), an anticipation of the "fight or flight" theory of the Modern era.

Theorizing nearly 100 years later, Romanes (1884/1969) noted that fear is the second emotion (after surprise) to develop in animals. Fear and surprise are in the lowest level of emotional development—"emotions preservative of self." Higher levels have more to do with social relationships, e.g., "social feelings." He added that inferences about emotion drawn from actions become less and less reliable as one moves through the animal kingdom to organisms "less and less like our own."

Romanes saw fear as the "ideal" or imaginal representation of the perception of painful sensations experienced previously. It is formed after the child is able to perceive sensations (and thus able to experience pain) and manifests itself whenever the child encounters antecedent conditions similar to those which led to the original painful experience—a view that anticipates modern learning theory. This results in an internal representation of the pain perception: when the child does "suffer an ideal representation of the pains" it is called fear. Such fear is manifest by the second or third week of infancy.

Charles Darwin (1859), perhaps the greatest functionalist, saw the influence of habit in all the emotions. Sensations that are called "exciting" lead to energetic action. Other emotions and sensations are called depressing because they do not result in energetic action. Fear and pain may lead to action initially, but eventually the organism progresses to complete exhaustion. These expressive actions of man and animals are innate and not learned, but presumably their functional utility reinforces their use and they become habitual behaviors.

Darwin noted that early progenitors of man did not restrain their screams and thus did not form facial expressions of grief and anxiety, such as making eyebrows oblique and drawing down the corners of the mouth. Thus, grief and anxiety were thought to be uniquely human (see Hilgard, 1987; Watson, 1979).

Although Darwin did not influence the "new" German psychologists of the pre-Modern era, with their emphasis on the static human adult mind (e.g., Wundt), he did influence British scientists like Galton, Spencer, Romanes, and Morgan (Watson, 1979). Later, the influence reached American psychologists like James, Hall, and the functional school of Dewey and Angell. Darwin believed that ideas regarding drives to action resided in instincts and emotions that influenced survival. Much comparative psychology research sprang from his work (Hilgard, 1987).

One of the most important aspects of Darwin's (1872/1965) theory of emotional expression was his promulgation of three major principles: (1) serviceable associated habits; e.g., if teeth are bared in a fight, this may become the signal for anger expression; (2) antithesis; i.e., an opposite gesture usually signals an opposite emotion; and (3) direct action of the nervous system; some responses simply consisted of highly activated physiological states that had little adaptive significance, e.g., writhing in pain. These points provided the springboard for much investigation and theorizing from the time of Darwin up to the Modern era (Plutchik, 1980).

Dewey (1894, 1895), of the Chicago functionalism school, emphasized the role of conflict in experienced emotion. Dewey thought fear developed from conflict or indecision, rather than physiological arousal, e.g., deciding whether one has time to raise one's gun and shoot the charging bear or whether one should run—whether the flight or the fight leads to survival.

McDougall (1908/1925), extending functionalism in a more existential direction, with purpose being implied as more inherent in the organism rather than learned from society, paired instincts and emotions. Emotions were seen as part of inborn instinct, and all instincts had three components: (1) cognitive—the impulse to attend to an object, (2) affective—the impulse to experience a certain emotion toward a given object, and (3) conative—the impulse to engage in some action toward an object. In this schema, the emotion "fear" corresponded with the "flight" instinct.

The Psychodynamic Perspective

The true psychodynamic exploration of fear and anxiety might be traced to 1894, when Freud first separated anxiety neurosis from neurasthenia as a distinct clinical entity (Freud, 1953–1966). Freud's theorizing on anxiety can be divided into first theory and second theory. First theory (1895) involved neurotic anxiety stemming from *blockage* of unconscious impulses, leading to transformation to neurotic anxiety. Second theory (1926; see Freud, 1953–1966), which will be discussed more extensively in the Modern era section, involved the development of anxiety due to a feeling of foreboding that such impulses *would overwhelm* the defenses and become manifest behaviors.

Other changes in Freud's conceptualizations on anxiety during the pre-Modern era include his realization in 1897 (Freud, 1953–1966) that his initial idea that traumatic

childhood sexual experiences lay behind neurosis had to be set aside because such abuse would have to be more widespread than he was ready to admit. He then decided that his patients' reports of such incidents were probably more fantastic than factual, a position that is being challenged currently.

THE MODERN ERA

In our conceptualization, the pre-Modern era spans 1900 to the present. As with the pre-Modern era, it provides a rich literature on fear and anxiety, especially in the area of learning theory and physiological–neuropsychological approaches. Although we found no major sources that spoke to the functionalist viewpoint, it has been noted elsewhere that in American psychology functionalism has so pervaded our conceptualizations that it is no longer a specific school or system (Hilgard, 1987). This incorporation of functionalism is particularly true with regard to the physiological–neuropsychological and behaviorism approaches.

The Physiological–Neuropsychological Perspective

Cannon (1927, 1929), a physiologist, found that the most dramatic physiological responses occurred with anger, fear, and rage. He noted a number of responses not suggested by other theorists, such as cessation of digestive movements of the stomach, increase in blood pressure, acceleration of the heart, and increased secretion of epinephrine into the bloodstream. He was not, however, successful at distinguishing physiologically among the different emotions.

Similarly, Ax (1953) found no physiological differences between anger and fear except for slight increases in muscular tension during anger and slight increases in respiration rates during fear.

Funkenstein (1955) was able to differentiate the physiological correlates of anger from the physiological correlates of fear. He found that rage increases the noradrenalin production of the adrenal medulla, while anxiety mobilizes secretion of the adrenal cortex (cf. Alexander & Selesnick, 1966). This differentiation, however, remains in dispute.

In theorizing about the purpose of arousal, Cannon (1915/1925) postulated the emergency theory. He reasoned that physiological responses prepared the organism to meet emergencies, so they must have some adaptive significance. Sympathetic nervous system changes were seen, supporting James's visceral emphasis, which Cannon later sought to replace with his own theory.

Cannon (1927) refuted James's theory by showing that: (1) surgical separation of the viscera from the rest of the body does not eliminate emotion, (2) visceral changes are not fine-tuned enough to discriminate different emotions, (3) perception of changes in the viscera is not specific enough to serve the theory's purposes, (4) latency of visceral changes (1–2 seconds) is too slow to account for emotional reactions, and (5) artificially produced visceral changes do not necessarily produce emotional changes. Cannon's alternative theory involved greater influence of the thalamus as a sort of signal that visceral excitation, in select circumstances, was to be connected to emotional expression.

Bard (1934) later elaborated on Cannon, with the Cannon–Bard theory still emphasizing thalamic processes. This theory was then attacked by others, with criticism culminating in Lashley's (1938) critique in which he noted that the evidence did not

support the thalamus as being capable of the variety of patterns of emotion and its motivational aspects (See Hilgard, 1987, for an excellent summary).

Papez (1937) contributed to the debate in this area with his suggestion that the limbic system could be responsible for sustained emotional response. Hebb (1946) added a more cognitive component, seeing fear as resulting from feelings of confusion and loss of control—such as when one's escape route is blocked—which were reflected in "profound disorganization of cerebral processes."

An extension of Papez's thought can be found in MacLean's (1949) elaboration on the connection of the limbic system to the viscera, calling the viscera the "visceral brain" in the limbic system. He developed the role of the limbic system in an hierarchical context with his concept of the "triune brain" (cf. Levitt, 1980). The levels of this brain ranged from the lowest phylogenetic level, or "reptilian" brain (brainstem), to the highest level, or "neomammalian" brain, usually synonymous with cerebral cortex.

Further support for the role of the limbic system has been found in the work of Olds and Milner (1954), who discovered that immunization to pain and fear in animals was possible by implanting electrodes into the limbic system or paleocortex and electrically stimulating this area.

Pribram (1967) summarized this area of research by noting that James and Lange focused too much on peripheral nervous system activity and too little on the brain, while Cannon and Bard overly emphasized the thalamus, as it is actually the limbic forebrain or frontal paleocortex that is chiefly responsible for emotional expression (cf. Hilgard, 1987).

It has also been noted that the reticular activating system (RAS) controls the potential to experience anxiety (Malmo, 1957). Weakening of the inhibitory aspect of the RAS results in overactivation of the cerebral cortex and higher than optimal arousal. This meshes with Freud's thought that the ego experiences anxiety when it cannot inhibit stimuli and becomes overwhelmed by the id and the external stimulation.

Schachter (1964) believed physiological arousal is emotionally nonspecific, with no particular physiological patterns corresponding to any particular emotion. It is as if the mind can be conceptualized as an engine that can function at different levels of RPM. This is still the prevailing viewpoint, stemming from Selye's (1950) general arousal theory: anxiety, rage, sex, and so forth, all "look the same" inside the body.

Others have postulated that anxiety is physiologically equivalent to a subclass of fear (Martin, 1961). It involves similar physiological responses, e.g., increases in heart rate, systolic blood pressure, and cardiac output. These patterns of body responses are a function of increased adrenalin secretion (Breggin, 1964; Martin, 1961).

The most contemporary physiological–neuropsychological model is Gray's (1982) neuropsychological theory. From evidence collected in psychopharmacological experiments, he developed the idea of a "behavioral inhibition system" (BIS). The BIS responds to punishing or nonrewarding stimuli by stopping ongoing behavior and increasing arousal and attention to the environment. Antianxiety drugs appear to work by impairing the functioning of these limbic system brain structures and the prefrontal cortex of the forebrain. The BIS acts as a "comparator," comparing expected sensory events with actual events and activating response components of the system when a mismatch occurs.

Gray's theory is still under investigation, as findings from independent researchers have been mixed. In one representative study, Rachman and Lopatka (1986), examined snake phobics and their predictions of the amount of fear they would experience upon approaching a live snake versus their actual reported fear when the snake was approached. Findings confirmed the expectation that underpredicted mismatches (less

fear predicted than was actually felt) would be accompanied by hesitations in approaching the snake but that overpredicted mismatches would not. The hypothesis of behavioral slowing with underpredictions was not, however, directly confirmed. The authors suggested that Gray's theory should distinguish between overpredicted and underpredicted mismatches.

Learning Theory

The father of American behaviorism, John B. Watson (1919), de-emphasized inborn tendencies and insisted that the only innate emotions were fear, rage, and love. Fear was produced by loud sounds or sudden loss of support. Watson and Raynor (1920) taught a child named Little Albert to fear a rat by pairing its presentation with a loud noise, a classic in experimental psychopathology.

As pointed out by Harris (1979), the experiment was (1) confounded (e.g., the clanging noise elicited barking from one of the stimuli—a dog—startling everyone, including Watson and assistants) and (2) misrepresented (e.g., Watson later failed to mention early conditioning trials to the supposedly generalized objects, such as a dog and rabbit). According to Harris, the Little Albert report has become a part of psychological mythology, used to elucidate concepts, establish a sense of continuity in psychology, and to attract students.

Nevertheless, Watson successfully challenged William James's (1890) and McDougall's (1908/1925) view that anxiety was an inborn instinctive reaction, fixed and unlearned. The Little Albert experiment, despite its flaws, did suggest to many that fears were related to environmental experiences (Watson & Raynor, 1920), although Harris (1979) prefers to place this experiment in the category of "interesting but uninterpretable results" (p. 185).

Apart from explorations such as those mentioned above, American learning theorists up through the 1930s, working largely with laboratory animals rather than humans, were little concerned with behaviors thought to reflect anxiety. Rather, Freudian clinicians were the main sources of exploration in this area. This changed, however, when Freudian theory was incorporated into experimental psychology through Hull's group at Yale (e.g., Miller, 1948; Mowrer, 1939). These investigators conceptualized fear and anxiety as drives that could reinforce learning through their reduction, similar to reduction of hunger drive by food reward.

The founder of the Yale group, Clark Hull, authored the first systematic stimulus–response theory of learning (1921, 1943, 1952). In his theory, he stated that all organisms seek homeostasis and that the linkage between a particular stimulus (S) and response (R) is called a "habit." The effectiveness of the linkage is called "habit strength." Among his students were such later learning theory luminaries as John Dollard, Neal Miller, Kenneth Spence, and O. H. Mowrer.

As already noted, it was one of his students who launched the behaviorism–psychoanalysis rapproachment. Mowrer's (1939) paper entitled "A Stimulus Response Analysis of Anxiety and Its Role as a Reinforcing Agent" appears to be the first attempt to meld experimental psychology with a psychiatric syndrome, or with the area that today is known as abnormal psychology, and which has become largely the province of clinical psychology and psychiatry. Anxiety was conceptualized as an internal response learned through classical conditioning rather than an intrapsychic phenomenon.

Mowrer's (1939) conception of anxiety admitted no distinction between fear and anxiety, regardless of the psychoanalytic view that fear has a consciously perceived object, whereas anxiety has not. This absence of distinction between anxiety and fear

still serves for learning theorists as the first principle in the experimental study of anxiety.

Mowrer also postulated that anxiety: (1) is learned, (2) can serve to motivate trial-and-error behavior, and (3) reinforces the learning of new habits. These three postulates are essential features of a learned drive conception of anxiety, which is today almost universally accepted by learning theorists.

Later, Mowrer (1947) suggested two types of learning in an avoidance learning situation: (1) classically conditioned fear of the conditioned stimulus (CS) and (2) an instrumentally conditioned overt response to remove oneself from the fear-inducing situation and reduce the fear drive.

Dollard and Miller (1950) actually translated Freud's theory into a mediational stimulus–response framework. They utilized a Hullian conceptualization: all responses are drive impelled, and habit acquisition is a function of reinforcement. Fear was viewed as an extremely important secondary or learned drive.

Approach–avoidance conflict was seen as the most frequent type of conflict in human life, and it was believed that such conflict in human life, and it was believed that such conflict lay at the heart of neurosis. Stimulus generalization was the key to anxiety under this schema. Stimuli similar to the original anxiety-producing stimuli elicit the original conditioned response. Neurosis develops when there is no understanding of why avoidance behaviors make one feel better through reduction of the fear drive, a reduction that is reinforcement for such behavior.

Eysenck (1955) proposed a somewhat different perspective within the behaviorist domain. Eysenck distinguishes himself from other learning theorists by claiming that anxiety emanates largely from constitutional factors: (1) inherited lability of one's autonomic nervous system and (2) inherited excitation–inhibition balance, which is again linked to the nervous system. Regarding the second point, individuals are either susceptible to social learning (becoming guilt-ridden introverts) or not susceptible (becoming unsocialized extraverts). Fisher (1970) presents a succinct summary of Eysenck's position.

Another modern conception is the association between anxiety and stress (Levitt, 1980). Lazarus (1966) defined stress as a transaction in which the stimulus that provokes it is referred to as a "stressor." Spielberger (1972) developed a tripartite definition. Stress refers to the stimulus, threat is the individual's perception of the stress, and anxiety is the subsequent response.

Major attention has also been given to the distinction between state (situational) versus trait (chronic) anxiety (Levitt, 1980). Hanfmann (1950) originally suggested the distinction, although Nowlis (1970) had also been researching "mood" ("temporary reversible dispositions") since 1951. Cattell and Scheier (1960) are usually credited with having developed the terms "state" (temporary) and "trait" (anxiety proneness). Lazarus (1966) and Spielberger (1966, 1972) then popularized the distinction; anxiety as a trait was primarily proposed by Spielberger (1966, 1972). McReynolds (1976) claims inconsistency characterizes state anxiety, making it no different from other aroused states.

Lang (1969) sees anxiety as a hypothetical construct, a convenient fiction or inferred state that mediates between the threatening situation and the observed behavior. The construct is multidimensional, with each dimension not necessarily being manifested in a given situation, thus explaining low correlations across measures of anxiety.

Skinner (1953) poses a counterargument to the necessity of the construct with his position that mediators are not necessary in accounting for behavior. He suggests dispensing with the construct and talking about S–R connections. Such a viewpoint

has much to recommend it in terms of a science of behavior founded on prediction and explanation of behavior and obeying the laws of parsimony in explanation. (See, however, Rescorla and Solomon, 1967, for evidence contravening Skinner's views on the need for a mediating construct.)

Despite these other theoretical diversions within the learning theory–behaviorist school, one theory has dominated this system for the past 30 years: the Miller–Mowrer two-stage theory of fear and avoidance. Recently, Rachman (1984) insists that this theory must make way for newer theories that may overcome some of the Miller–Mowrer theory weaknesses, e.g., failure of some subjects to acquire fears in theoretically fear-invoking situations.

In a later refinement, Mowrer shifted from his original stance in which fear was the primary causal factor in avoidance, to one in which fear was an essential mediating variable, influencing avoidance behavior through its motivating properties.

Such a viewpoint is difficult to modify, however, given the powerful influence of Mowrer's theorizing: both Wolpe (1958) and Eysenck (1953) borrowed heavily from Mowrer in their development of behavioral methods to modify anxiety.

Further adjustments to the theory were seen when Mowrer (1960) later postulated a "safety signal" hypothesis, which was elaborated by Gray (1971). In this schema, striving for safety plays a large part in avoidance behavior. Behavior in those with anxiety disorders reflects their search for safety signals.

Despite the theoretical controversy, it should be noted that the main efforts of early behaviorist–clinicians were directed toward modifying fears, a task at which they were reasonably successful (Wilson, 1982). The success was tainted, however, by findings that desynchronous change was noted (Rachman & Hodgson, 1974): different indexes of fear (behavioral, physiological, and verbal self-report) showed different rates of response to treatment procedures. It has been proposed that concordance among three components of fear is likely to be high during strong emotional arousal, and high levels of demand should produce discordance. This was not totally supported by the research evidence.

Lang (1968) dealt with this issue by claiming that discrepancies of a desynchronous type were not measurement flaws but were manifestations of the phenomenon itself. That is, fear is a set of loosely coupled systems—behavioral, physiological, and verbal self-report. Being loosely coupled, these separate systems do not correlate perfectly, and desynchrony should be expected.

Seligman (1971) has proposed the existence of "prepared" phobias. This theory holds that humans are biologically predisposed to become fearful in situations that have threatened the survival of the species in the past.

The current state of affairs in theorizing about anxiety and fear, particularly from a learning theory or physiological–neuropsychological standpoint, is summarized well in Rachman's (1984) recent review. He notes the introduction of six newer theories: (1) Beck's (1974, 1982) cognitive theory, (2) Lang's (1977, 1983) bioinformational theory, (3) Bandura's (1977) self-efficacy theory, (4) Rachman's (1980) application of the emotional processing concept, (5) Gray's (1982) neuropsychological theory, and (6) Eysenck's (1982) revised neobehavioristic theory. Each theory is discussed briefly below.

Beck (1974, 1982) hypothesizes a cognitive cause for anxiety, extending his theory that has seemingly worked well with affective disorders into the area of anxiety. In his schema, a faulty automatic thought or image triggers anxiety. Treatment involves diminishing or abolishing the faulty reasoning. Some support for the theory is found in a study by Butler and Mathews (1983), which showed that anxious people make inflated estimates of personal risk of misfortune. Others have found, however, that affective judgments often precede cognitions (Rachman, 1981; Zajonc, 1980). This has been labeled the "primacy of affect" problem. In addition, in some conditioned anxiety responses, the

responses seem to occur independently of identifiable cognitions. It is difficult to predict how this theory will be regarded in subsequent years.

Lang's (1977, 1983) bioinformational theory posits that fear is a set of loosely coupled systems—verbal, behavioral, and psychophysiological. Emotions are to be understood as behavioral acts; there is a hierarchical arrangement of emotions. Lang attempts to define the structures in long-term memory that form the base for phobic behavior. He also tries to understand the conditions under which these are activated.

In Lang's theory, "fear structures" are relatively stable, enduring memory networks. "Phobic expression" is produced when a network is activated by sufficient input concepts that match the network. Phobic reactions are due to stable networks that can be triggered by circumscribed stimuli. More diffuse reactions are characteristic of generalized anxiety states. The fear structure is often too "firm" or stable to be affected by change in one element; e.g., simply supplying factual information about the harmlessness of a feared stimulus tends to be a weak reducer of fear.

Bandura's (1977) self-efficacy theory postulates that therapeutic behavior change comes about through improvements in perceived self-efficacy, which, in turn, is improved by performance accomplishments, physiological arousal, verbal persuasion, and vicarious influences. The implication here is that efficacious performance in an anxiety-producing situation should improve self-efficacy estimates for that situation, thereby reducing anxiety associated with that situation, e.g., reduction of performance anxiety through successful performance of the task in question. Some of the research reviewed in this chapter casts doubt on the adequacy of this model as an explanation for anxiety. The actual mechanisms behind anxiety production and maintenance may be more complex than this model suggests.

Rachman's (1980) application of the emotional processing concept involves the construction of three pathways to fear: (1) conditioning—a direct process, (2) vicarious acquisition, e.g., fear by contagion in battle (see Rachman, 1978), and (3) transmission of information, e.g., telling people they are at risk to contract AIDS. There are asymmetrical relations between fear and information transmission: information can *induce* fear but is a weak *reducer* of fear.

Gray's (1982) neuropsychological theory represents an attempt to provide a broad-based biological theory. Anxiety is a "central state" elicited by uncertainty, novelty, failure, etc. It is activation of the "behavioral inhibition system" (BIS) and is exhibited by (1) inhibition of ongoing behavior, (2) increased arousal, and (3) increased attention to the environment. Gray extrapolates from his theory to posit that the use of tranquilizing drugs during therapy would have adverse effects later on anxiety reduction. Instead, he believes that "toughening up" experiences are needed during therapy.

Eysenck's (1982) revised neobehavioristic theory marks a return of interest to the long-neglected area of individual differences. He applied his general personality theory to the specific area of fear and anxiety. Eysenck stresses the importance of an incubation process in the development of persistent anxiety. Certain conditioned responses continue to grow even in the absence of further S–R pairings.

DeSilva and Rachman (1981, 1983) and Gelder (1982) challenged all learning theory explanations of therapeutic effects as being based on variations of the extinction, inhibition, or habituation themes. Reductions in fear can take place in the absence of exposure to a specific fear-producing stimulus, e.g., the reduction in fear that takes place when depression lifts.

Further support for these challenges of learning theory explanations is found in Klein's (1983) observation that "spontaneous" panic attacks often occur as the root cause of agoraphobia. It is estimated that 20–60% of agoraphobia onsets are related to panic attack (Mathews, Gelder, & Johnston, 1982; Thorpe & Burns, 1983), attacks that could

be construed as the result of physiological dysfunction rather than any learned association in the external environment.

Craske and Craig (1984) found support for the three-systems model (verbal report, behavioral response, and physiological response; this is similar to Lang's conceptualization) over self-efficacy theory in an examination of musical performance anxiety among 40 competent pianists who were divided into "relatively anxious" and "relatively nonanxious" groups and who then performed alone and before an evaluative audience. Self-efficacy theory suggests that the three systems (verbal, behavioral, and physiological) would be synchronous, depending upon the degree of self-efficacy. Results indicated, however, that the anxious group showed synchrony and the nonanxious group showed desynchrony, supporting Lang's model of "loosely coupled" systems.

Clearly, more research involving the various learning theory-based explanations is needed. Few conclusions can be drawn until greater consistency in findings across studies emerges.

Cognitive Approaches

A new category introduced in the Modern era, is the cognitive perspective. Historically, cognitive theories may be regarded as an outgrowth of learning, physiological, functional, and existential approaches. Cognitive elements were present in the theories of James (1890), Dewey (1894, 1985), and McDougall (1908/1925), although the word *cognitive* did not become popular until later (e.g., Lazarus, Averill, & Opton, 1970; cf. Hilgard, 1987).

Precursors of the cognitive perspective include the early experiments involving epinephrine injections and reports of feeling fearful (Cantrill & Hunt, 1932; Maranon, 1924). These preceded Schachter and Singer's (1962) famous experiment, which led to formulation of the two-factor theory of emotion: arousal and cognitive appraisal both were needed to yield an emotional reaction.

Arnold (1960) could be seen as another early proponent of a cognitive approach through her position that the first step in emotion development is an "appraisal" of the situation. She is perhaps best known, however, for her proposed physiological explanation of emotion, including separate corticothalamic pathways for excitatory emotions.

Research on modeling and observational learning, possibly more than any other single factor, led to the serious examination of cognitive approaches. Berger (1962) found that subjects could acquire emotional responses vicariously by watching others in pain. Bandura's (1977) previously mentioned self-efficacy theory was another milestone, while Rachman (1978) expressed the view that fear was transmitted from mother to infant.

Studies like these were forerunners of more clearly cognitive investigations such as that of Higgins, Klein, and Strauman (1985), who found that discrepancies between actual self-concept (attributes one believes one possesses) and "ought" self-concept (sense of personal duty, what one should do or be) were associated with anxiety, while discrepancies between actual and ideal self-concept (one's personal desires or aspirations for one's self) were associated with dejection or a more depressed mood state.

Taken together, these theorizations and research findings form a promising beginning that could yield useful results in the next decade.

Existentialism

The modern existentialists' theme is that anxiety is a quality of existence for all humans. The basic cause is thanatophobia—fear of nonbeing or becoming nothingness. Ancient societies have felt the need to create mythical places where people go when they

die, e.g., the Norse Valhalla, and the Egyptian Kingdom of Osiris. This was an attempt to convince themselves that they did not really die (Christian, 1977) and thus served as a means of avoiding death anxiety. Key elements in the writings of philosophers like Kierkegaard and Heidegger are alienation, anguish, anxiety, bad faith, boredom, etc. Kaplan calls the existentialist essentially a "literary psychologist" (Grunebaum, 1970).

Probably the most dramatic contributions in the area of existentialism and anxiety have come from Kierkegaard (1844/1980). Anxiety is seen as the experiential state that arises when one confronts one's freedom to make choices with no solid objective evidence on which to identify the best choice; nor can one foresee all the consequences of making any particular choice.

Original anxiety is the anxiety of the immature, before one has reached a state of self-awareness, in which it is realized that one has a responsibility for personal action. Later anxiety is the anxiety that comes when one has reached the stage of realizing one's responsibility for action.

Heidegger (1927/1962) analyzed the question in a way similar to that of Kant. He does not explore whether or not humankind is anxious but pursues the sociological question of "What is the state of the world and of humans that such an experience exists?"

If one remains the nonempathetic observer, anxiety is indistinguishable from fear. Fear is possible because humans are spatially oriented and can discern dangerous possibilities of proximal things. Anxiety, however, does not usually involve such "things." Fear differs from anxiety in that the fearful person moves away from the clearly grasped object of his or her fear. The anxious person often is unaware of the true source of his or her anxiety.

Schachtel (1959) contributed to this approach by attempting to integrate Freud and phenomenology. He concluded that anxiety is a feeling of helplessness one experiences when one is confronted with the unfamiliar.

Conversely, Goldstein (1963), in his "organismic orientation" avoids the pitfalls of many other psychodynamic or phenomenological theorists by rejecting mind–body and person–world dualities, thereby eliminating the need to reduce anxiety to intrapsychic or intraorganismic process.

One then does not have to incorporate homeostatic ideas of anxiety as tension reduction. Further, Goldstein's (1963) emphasis on "becoming" allows freedom from being locked in to explaining anxiety as a product of past learning or traumas. Anxiety is seen as a temporal phenomenon rather than a spatial one. Although Goldstein affirms the experiential components of anxiety, he does not carry out detailed analyses of them, speaking only of a sense of catastrophe, nonbeing, nothingness.

Rollo May (1950) took a less extreme approach. Anxiety is caused when there is a threat to the values one holds as essential to the existence of one's personality, rather than to one's literal existence.

The Psychodynamic Perspective

Although Freud was represented in the pre-Modern era, the bulk of his important writings on fear and anxiety, chiefly involving theory one and theory two, fall in the Modern era (post-1900). He conceptualized neurotic anxiety as distinct from anxiety experienced by normal individuals because neurotic anxiety was unrealistic. According to his first theory, neurotic anxiety was a consequence of "unemployed libido." The primary defense of repression could not completely block the energy from the forbidden impulse, and this was channeled into anxiety.

Primary anxiety, beginning with the trauma of the birth process, is the model from which all subsequent anxieties are drawn. If every need of the young organism could be immediately met, anxiety would presumably not develop. The ego interposes thought between impulse and action and thereby invokes a postponement of gratification.

Ego attempts to maintain tranquility between three opposing forces: (1) external environmental demands, (2) superego, and (3) id. As outlined by Freud, this causes, respectively, three kinds of anxiety: (1) objective or realistic—the ego's reaction to actual external danger, (2) moral—guilt or shame, or real fear of punishment, and (3) neurotic—fear of consequences if previously punished id impulse is allowed expression.

Neurotic anxiety can be expressed in three forms: (1) free-floating, (2) phobic, and (3) panic or near-panic anxiety. As a Darwinian and natural scientist, Freud conceived of anxiety as being couched in terms of energy distribution. The ego attempts to maintain homeostasis among influences from its three primary energy sources; the external environment, the id, and the superego.

The ego is seen as the "seat of anxiety" since it is the mediator attempting to maintain systemic function within a social context (see Fisher, 1970, for a summary of Freud's writings on anxiety and fear).

Freud's (1926) second theory made more explicit the conditions or situations that may cause repression. It also reversed the direction of the relationship between anxiety and impulses: instead of repression of impulses causing anxiety, anxiety about the expression of instinctual desires alerts the individual to the need for repression.

Birth was still viewed as the prototypical anxiety-producing situation. The neonate is assaulted with uncontrollable overstimulation. Later, anxiety reflects fear of being reduced again to infantile helplessness by overstimulation from the id.

As we have already noted, Freud was never particularly impressed by anxiety as a shaper of behavior and personality, assigning any importance to it only late in his career (Freud, 1923). Within psychoanalysis, the significant development of constructs like anxiety as well as of general theory and psychotherapy came from a source outside of the Freudian mainstream. So-called neo-Freudianism actually began with Alfred Adler, the first member of the original Freudian inner circle to be cast out for heretical theorizing. In barest essence, Adler dared to suggest that social and cultural impacts might be as important—perhaps more important—to personality development and psychopathology than biological influences.

Neo-Freudianism flourished in the decades immediately surrounding World War II. Its spokespersons and primary theorists were all trained as analysts: Erich Fromm, Karen Horney, and Harry Stack Sullivan. Each wrote at least two seminal books that constituted the major literature of neo-Freudianism (Fromm, 1941, 1947; Horney, 1937, 1945; Sullivan, 1953a, 1953b).

Neo-Freudian theorists rejected the primordiality of the libido and the priority of the biological over the sociocultural. They perceived one's interaction with one's environment as basic to the creation of personality and emotions like anxiety. And they made anxiety the central concept of their theory.

Horney led the way. In her early volume, *The Neurotic Personality of Our Time* (Horney, 1937), anxiety became for the first time in psychoanalytic history "the dynamic center of neuroses." Fear, wrote Horney, is "a reaction that is proportionate to the danger one has to face, whereas anxiety is a disproportionate reaction to danger, or even a reaction to imaginary danger," a distinction that was later elaborated by Sullivan (1953a). She even pointed to Everyman's problem in defining "proportionate" for himself.

Sullivan's contribution lay in his emphasis on the developmental ontogeny of anxiety. Sullivan saw anxiety as a uniquely human and social response in which

interrelationships were inevitably involved. Disapproval, condemnation, failure, or anticipated failure all led to anxiety—much like Murray's concept of infavoidance.

Fromm agreed with Sullivan's idea of the need for adult approval in childhood to avoid becoming anxious. He added that the behaviors that a child may have to suppress in order to avoid punishment are not necessarily undesirable in an absolute sense but are at variance with the dictates of the particular culture into which a child is born.

Another key distinction between Freud and his socially oriented followers was the importance of *secondary anxiety*. For Freud, the only really important anxiety was primal—the birth trauma—and all other anxieties occurring later in life were merely reflections that the primal id still threatened. Horney and Sullivan saw secondary anxiety as springing from threats to the defensive system, to a psychological homeostasis that defended against the painful experience of anxiety.

Finally, still another difference lies in the view of the etiology of hostility. While all analytical thinkers agree that repressed hostility can be a significant cause of anxiety, Freud saw hostility as etiologically biological, an aspect of the death instinct. The neo-Freudians advanced hostility to its current status: a reaction to frustration.

Much of neo-Freudian thinking has been worked into a core of original Freudian concepts to create what is today the basis of all dynamic psychotherapies and personality theories. Contributions from anthropology have long since laid to rest Freud's biologically determined sequence of human development in favor of the sociocultural emphasis of his more contemporary followers.

Jacobson (1953, 1964) presents another fairly well-articulated neo-Freudian position. In her schema, both id instinctual impulses and ego social values are "equiprimordial." Anxiety is both a "structural" and an "economic" phenomenon (two of Freud's original perspectives), and it may be defined as the affect associated with intersystemic tensional problems that develop between id and ego when the ego is forced to discharge primitive impulses through channels less preferred by the id.

Functionally, anxiety is a signal that the ego utilizes in order to further adaptation. Psychodynamically, it is a discharge phenomenon that allows it to be fused or libidinized with other affects.

In her approach, Jacobson dealt with two orthodox Freudian deficiencies: (1) there is no longer a reduction of ego and external world values to inner, unconscious instinctual ones and (2) the external world stimuli are given equal status with instinctual ones. She also does not limit affect to conflictual material but allows it to accompany all psychic energy processes, some of which are pleasurable.

SUMMARY AND CONCLUSION

We have traced the history of the five major perspectives on fear and anxiety through four major eras. We summarize the main developments in each perspective as follows:

The physiological–neuropsychological perspective was traced from the mechanistic determinism of Descartes and his "animal spirits," which determined emotional expression and were no more voluntary than cardiac function, through subsequent developments of: James Mill's suggestion that there existed a two-way communication between internal physiological states and ideas or feelings; the James–Lange hypothesis that visceral-autonomic nervous system response determined whether one felt fearful; Cannon's theory that such arousal prepared the organism for emergencies; the Cannon–Bard inclusion of the thalamus as the primary brain structure mediating emotional

experience; Papez's inclusion of the limbic system; Hebb's addition of the cognitive component of confusion; McLean's hierarchical "triune brain" concept, incorporating the limbic system; Pribram's emphasis on the "limbic system forebrain"; and Gray's positing of a behavioral inhibition system that compares sensory traces for familiarity with known precepts and puts the organism on "alert" when mismatches occur.

Together, these physiological–neuropsychological explanations attempt to explain how the body and brain react to novel or fear-producing stimuli, and they even pose some explanation as to why certain stimuli are fear producing (i.e., novelty or clear danger). However, none really addresses the development of fearfulness or anxiety, and they tend not to deal with individual differences.

Functionalist explanations were seen as early as biblical times, when fear appears as the functional basis of many primitive religions and as an important factor encouraging civil obedience. Fear's adaptive, protective properties have been noted since the Middle Ages, and fear has been seen since Hobbes's day as the primary element in motivation and a necessary ingredient in encouraging humans to develop protective societal orders and rules.

Other functionalism contributions include: Erasmus Darwin's conceptualization of fear as the expectancy of repetition of a previously experienced unpleasant sensory experience; Romanes's description of fear as the imaginal representation of previously experienced painful sensations, coming forth whenever the organism perceives antecedent conditions similar to those that produced the initial pain; Charles Darwin's view of fear as adaptive if it leads to energetic action, while noting, in an anticipation of Selye, that it could be maladaptive when it leads to exhaustion (he also noted that only humans were capable of anxiety, due to their ability to restrain their screams); Dewey's positing of conflict (deciding whether to run or fight) as central to fear; and McDougall's contribution of the idea that emotions were attached to inborn instincts—fear being paired with the instinct to flee.

Particularly in American psychology, functionalism then became so pervasive in other perspectives that it lost its distinct identity and could no longer be traced as a separate perspective.

Overall, these functional explanations provide some explanation as to why fear and anxiety exist. Fear exists because of the advantage of being hyperalert in the presence of actual danger. Anxiety exists due to the human ability to restrain impulses or instinctual reactions, which may relate to adherence to social rules, which, in turn, reduces fear from actual danger at the hands of other humans.

The learning theory–behavioral perspective is relatively young, historically beginning with Watson's evidence that fear could be learned and continuing with Hull's group at Yale (Miller, Mowrer, etc.) conceptualizing fear as a learned drive. Although this formal perspective may be new, the current review has demonstrated that fear has been shaping human behavior since the dawn of civilization. Functionalist Erasmus Darwin's pre-Modern era discussion of habit as a determiner of behavior and fear developing as a result of previously experienced unpleasant stimuli are familiar concepts to the Modern era learning theorist or behaviorist.

Mowrer reframed clinical anxiety states as learned responses and set the standard—within the behavioral perspective—of not distinguishing between fear and anxiety. He later proposed a two-stage theory, including classical conditioning and operant conditioning as an explanation of avoidance (neurotic) behavior.

Eysenck followed with the idea of individual differences in "constitution" (reactivity of the nervous system) as a predisposing factor, and Spielberger popularized the state–trait anxiety distinction. Looking toward the future, Rachman's (1984) review of

the "new theories" included: Lang's bioinformational theory, Bandura's self-efficacy theory, Rachman's three-pathways theory of emotional processing, Eysenck's revised neobehaviorist theory, and the modern cognitive theories, such as Beck's.

Existentialist viewpoints can be culled from biblical accounts, as examined by Kierkegaard, including the suggestion that both initial innocence and subsequent choice between good and evil in the Garden of Eden were anxiety producing. Ancient philosophers (Plato, Zeno, Epictetus) introduced a rational-existential viewpoint, with anxiety seen as irrational and with arguments being made to explain it away in what may be seen (through the focusing gaze of Albert Ellis's recent adaptation of this thought into rational-emotive therapy) as an early form of cognitive therapy. This viewpoint culminates with Kurt Goldstein's belief that anxiety is a temporal phenomenon, attached to a sense of nonbeing, and with Rollo May's move away from anticipation of death and toward anticipation of the disintegration of one's personality as the primary cause of anxiety.

The psychodynamic viewpoint on fear and anxiety is little represented in early writings, and its beginning is most productively traced to Freud's pre-twentieth-century writings separating anxiety neurosis from neurasthenia.

Later contributions include Freud's second theory, in which he posited that, rather than the suppression of impulses causing anxiety, it was actually the fear that impulses would break through the defenses that caused anxiety.

The neo-Freudian Horney's "basic anxiety" (the feeling of being helpless in a hostile world) was related to living in society and meshed with Sullivan's emphasis on social development, in which "malevolent transformations" laid the groundwork for the feeling that one is living among enemies.

Hall's belief that prior punishment for impulse release was necessary to develop neurotic anxiety represents some rapproachment with a learning theory stance, while Jacobson's elevation of social pressures to equivalency with instinctual ones, and her suggestion that organisms actually seek a "preferred state" of tension, represents a different twist on the traditional psychodynamic views of homeostasis.

An examination of the interconnectedness of these perspectives across the centuries reveals that functionalism and existentialism form the two major distinct branches. Learning theory, psychodynamic, and physiologic–neuropsychologic perspectives owe much to functionalism, whereas existentialism stands alone as a unique perspective.

The functionalist Erasmus Darwin's definition of fear as an "expectation of disagreeable sensations" previously experienced coincides neatly with the concept of avoidance learning within the learning theory perspective, while functionalism's emphasis on the important role of self-preservation in the experiencing of fear bears similarity to the psychodynamic viewpoint of fear being generated by feelings that the ego was going to be overwhelmed by id impulses, if the ego can be seen as somewhat synonymous with the self.

Furthermore, Darwin influenced the British psychologists, such as Galton and Romanes, who later influenced Americans James and Hall, who influenced Dewey and Angell, who, in turn, influenced John B. Watson. The functional aspect of their theorizing—one behaves in a given way because of specific reinforcements—is a thread that connects them through the centuries.

Learning theory's lack of distinction between fear and anxiety bears direct resemblance to the physiological–neuropsychological lack of clear distinction between different emotional states in terms of physiological responses. Similarly, connections to a functionalist evolutionary viewpoint are seen in Eysenck's positing of constitutional factors (a hyperactive autonomic nervous system) influencing the development of anxi-

ety and Seligman's "prepared phobias," which are species-specific predispositions to fear certain things.

The physiological–neuropsychological perspective shows many connections to functionalism. Functionalism is seen in Cannon's emergency theory of fear, and in Gray's BIS, which causes the individual to pay particular attention to rewarding or punishing stimuli, stimuli whose discrimination in earlier times might have meant the difference between life or death. Malmo's positing of the role of the RAS in anxiety parallels Eysenck's emphasis on the autonomic nervous system. Hebb's cognitive component in fear (confusion or disorganization) may be seen to link with an existentialistic fear of the unknown, i.e., death or nothingness.

Similarly, existentialism's "later anxiety," a feeling of helplessness when confronted with the unfamiliar, seems similar to Gray's BIS comparator, which alters physiological functioning when expected stimuli do not match perceived stimuli.

The strongest connections probably occur, however, between psychodynamic and functionalist perspectives. Erasmus Darwin's physical trauma from birth as a cause for fear is reflected directly in Freud's primary anxiety from the birth experience, which serves as a model for later anxiety. The functionalist connections are especially clear with regard to the neo-Freudians and their emphasis on social structures. Even Freud's moral anxiety appears as a necessary concomitant to living in society, as noted by early chroniclers of ancient Hebrew history and English writers of the pre-Modern era. Fear make the gods, and from such fear spring laws and societal structures that ultimately actually reduce fear through their protective structures. Fear of punishment for law-breaking, however, is still present, and, in the Freudian perspective, such urges to break the law (i.e., act on id impulses without regard to societal restrictions), and fear that such urges will overwhelm internal controls, causes most anxiety.

Existentialist connections are also seen in Klein's fear of death as a primary cause for anxiety.

Sullivan's "bad nipple" of the mother "teaching" the child to be anxious (possibly through modeling) could be readily explained within a learning theory model, and the neo-Freudian and Freudian view of fear (not anxiety) as an "adaptive response" can be seen to emanate directly from Darwin and other early functionalists.

John Dickson Carr was very probably correct about the persistence of the anxiety–fear experience over the ages. The analysis and conception of anxiety and fear have undergone, however, considerable development since the earliest accounting of these phenomena. As can be seen, the major perspectives examined here have many cross-currents and commonalities that weave them together through the centuries. Given recent advances, particularly from those theorists with a behavioral or cognitive emphasis, this development of and cross-fertilization among perspectives appears likely to continue.

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